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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,566	02/09/2001	Takahiro Kumura	074273/0181	6166

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EXAMINER	
GHULAMALI, QUTBUDDIN	

ART UNIT	PAPER NUMBER
2637	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/779,566	KUMURA, TAKAHIRO	
	Examiner	Art Unit	
	Qutub Ghulamali	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive applicant's arguments/amendments filed on 08/24/2005.

Response to Arguments

2. Applicant's arguments/amendments filed 08/24/2005 regarding claims 1-17, have been fully considered but they are not persuasive. Applicant states that Blakeney demodulator (204) does not receive any demodulation timing data, but rather it computes and outputs demodulation timing data based on I and Q data inputs. The examiner respectfully would like to draw applicant's attention to claim 1, wherein in claim 1, lines 9-10, recite "frequency offsets from one of said correlation values and said power values and demodulation timing data...", inferring that any one of - correlation value, power value or demodulation timing data can be used in estimating frequency offsets. The support for such a reasoning to use any one of the three values can be found in applicant's specification, see page 12, lines 6-8, rendering this argument moot.

As per applicant's remarks regarding "Blakeney does not disclose or suggest that it is used for correction of a correlation value" is improper. The claim 1, do not correct "correction value", therefore the remark by the applicant is considered moot.

Regarding claim 15, claim 15 is rejected as follows:

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu (USP 6,049,449) in view of Blakeney et al (USP 5,490,165).

Regarding claim 15, Komatsu discloses (figs. 1, 2), a spread spectrum communication system comprising:

a search section which calculates correlation values from a received spectrum spread signal, calculates power values as addition values of symbols corresponding to said correlation values and power addition values of said power values, and selects larger ones of said power addition values to output together with timing data corresponding to said selected larger power addition values, one of said symbols and said power values being corrected in phase based on phase change quantities (col. 7, lines 8-11, 3550; col. 8, lines 27-67; col. 9, lines 1-8; col. 11, lines 1-42);

a demodulation path selecting section (8) which selects path timings from said timing data based on said selected larger power addition values and outputs said demodulation timing data indicative of said path timings to said frequency offset estimating section (col. 7, lines 35-49, 50-67).

Komatsu, however, is silent regarding frequency offsets from one of said correlation values and power values and demodulation timing data and calculates phase change values from the

estimated frequency offsets to output to search section, and wherein said frequency offset estimating section performs frequency offset estimation by delay detection or Fast Fourier transform (FFT) estimation.

Blakeney in a similar field of endeavor discloses a frequency offset estimating section, which estimates frequency offsets from one of said correlation values and said power values and calculates said phase change quantities from the estimated frequency offsets to output to said search section (col. 3, lines 1-28; col. 9, lines 47-66). Blakeney further discloses said frequency offset estimating section performs frequency offset (time offset) estimation by delay detection (determines by scanning the channel in the time domain) (col. 4, lines 1-10). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a frequency offset estimation in correlation values and power values and performs frequency offset (time offset) estimation by delay detection (determines by scanning the channel in the time domain) as taught by Blakeney in the apparatus of Komatsu because it provide correlation of power values to mitigate differential path delays of signals in system seeking rapid response and provide improvement in communication channel performance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-14, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu (US Patent No. 6,094,449) in view of Blakeney, II et al (US Patent 5,490,165).

Regarding claims 1, 2, 6-9, 12, Komatsu discloses (figs. 1, 2), a spread spectrum communication system comprising:

a search section which calculates correlation values from a received spectrum spread signal, calculates power values as addition values of symbols corresponding to said correlation values (i.e., for integrating the power value for the integration time corresponding to the plural slots) and power addition values of said power values, and selects higher (larger ones) power values in the magnification order of power per slot from a larger power value to a lower power value by the number of the first correlators 4', a long time integration path search unit 7 for integrating the power value for an integration time longer than that of the short-time integration path search unit 6 by the time corresponding to plural slots and selecting higher power values in the magnification order of power per slot from a higher power value to a lower power value by the number of the first correlators 4', a demodulation path selection unit 8 which selects path (reception) timings from timing data for demodulation in the magnification order of power per slot from timings which are selected by excluding the same timing and adjacent timings thereto in the short-time integration path search unit 6 and the long-time integration path search unit 7, a second correlator 9 for correlating the reception signal and the spread signal at the reception timing for demodulation to obtain a correlation value, and outputs demodulation timing data indicative of path (reception) timings (col. 7, lines 8-11, 35-50; col. 8, lines 27-67; col. 9, lines 1-8; col. 11, lines 1-42); and

wherein during the calculation of said power values, said search section corrects phases of said symbols based on said phase change quantities calculated by frequency offset estimating section (col. 9, lines 40-50).

Komatsu, however, is silent regarding frequency offsets from one of (any one of the three) said correlation values and power values and demodulation timing data and calculates phase change values from the estimated frequency offsets to output to search section. Blakeney in a similar field of endeavor discloses a frequency offset estimating section, which estimates frequency offsets of said correlation values and said power values and calculates said phase change quantities from the estimated frequency offsets to output to said search section (col. 3, lines 1-28; col. 9, lines 47-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a frequency offset estimation in correlation values and power values and demodulation timing data as taught by Blakeney in the apparatus of Komatsu because it can mitigate interference to all signals seeking rapid response and provide improvement in the channel performance.

Regarding claims 3, 5, 11, 14, 16, 17, Komatsu teaches a signal converter for converting the received (reception) spread spectrum signal into a baseband signal, a sample and hold circuit for sampling the baseband signal, holding the sampled baseband signal and outputting the sampling signal, a symbol integrator 5, the correlation value is demodulated on the basis of the theoretical value of the symbol corresponding to the correlation value or the judgment value after demodulation, and integrated over plural symbols to obtain a power value, a first correlators 4', a demodulation path selection unit 8 which selects path (reception) timings from timing data for demodulation in the magnification order of power per slot from timings which

are selected by excluding the same timing and adjacent timings thereto in the short-time integration path search unit 6 and the long-time integration path search unit 7, a second correlator 9 for correlating the reception signal and the spread signal at the reception timing (abstract; col. 2, lines 63-67; col. 8, lines 27-67; col. 9, lines 1-8; col. 11, lines 1-42).

Regarding claim 4, 10, 13, Komatsu teaches in combination with teachings highlighted above, calculating the power of the integration of the plural symbols, thereby obtaining a power value; a short-time integration path search unit for adding power values over plural slots (i.e., integrating the power value for the integration time corresponding to the plural slots) and selecting higher power values, the number thereof corresponding to the number of the first correlators, in the magnification order of the power per slot from a larger power per slot to a lower power per slot; a long-time integration path search unit for adding power values over plural slots whose number is larger by plural slots than that of the short-time integration path search unit (i.e., integrating the power value for an integration time longer than that of the short-time integration path search unit by the time corresponding to plural slots) and selecting higher power values, the number thereof corresponding to the number of the first correlators, in the magnification order of power per slot from a larger power value to a lower power value; a demodulation path selection unit for selecting a reception timing for demodulation (col. 3, lines 5-30).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.
November 10, 2005.

JEAN B. CORRIELUS
PRIMARY EXAMINER
11-11-05